

REMARKS

Claims 1-4, 7-18, 21-30, 33-55, 58-62 and 65-71 were pending in the present application. By virtue of this response, Claims 1, 15, 27, 47, 51 and 59 have been amended. New Claims 72-76 are added. Accordingly, Claims 1-4, 7-18, 21-30, 33-55, 58-62 and 65-76 are currently under consideration. Amendment of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented.

Claim Rejections/Objections

Claims 1-4, 7-11, 13-18, 21-23, 25-30, 33-43, 45-55, 58-62, 65-68 and 70-71 stand rejected under 35 U.S.C. §103(a) as unpatentable over Sako et al., and further in view of Nakajima.

Claims 12, 24, 44 and 69 stand rejected under 35 U.S.C. §103(a) as unpatentable over Sako et al. and Nakajima further in view of Quan.

Claim Amendments

Each of independent Claims 1, 15, 27, 47, and 59 has been amended essentially the same way in two respects. First, the claims as earlier pending in their final clause recited in the alternative two different features (the pointer or the watermark). These claims have been amended so each now only recites one of these features which is the watermark. Second, as regards the watermark, the claims have been amended to improve clarity. Additionally since now the earlier pending independent claims only recite the watermark feature, a set of new independent Claims 72-76 has been added directed to the pointer feature, see below.

The amendments to the earlier pending independent claims conform more closely to the specification at paragraph 35 (in the published application) at page 4. This says in pertinent part “Another place to put the encoded number of storage duration units is in a watermark including the number. Typically this number would be an indication of the number of time units...or hours or days that the storage is to be permitted to persist.”

So the final clause of Claim 1 now recites “wherein the indication of how long to allow subsequent digital storage is a watermark located in the modified analog video signal including an encoded number of digital storage duration units.” Note that the reference to “units” here refers to the 90 minute time units disclosed in paragraph 35, as well as alternatively the number of hours or days or other time units. It is pointed out that hours or days or minutes or weeks, etc. are also time (duration) units and hence the claim refers to both relatively arbitrary time units, such as the 90 minutes disclosed in paragraph 35 as well as hours or days or other time units.

References

The key reference is now Nakajima because the Examiner at page 4 of the Action in the third paragraph said in part:

Claims 1 and 15 differ from Sako in that the claim further requires an indication of how long to allow subsequent digital storage wherein the indication of how long to allow subsequent digital storage is a watermark in the analog video signal for a number indicating a number of digital storage duration units.

In the same field of endeavor Nakajima teaches an indication of how long to allow subsequent digital storage where the indication of how long to allow subsequent digital storage is a watermark in the analog video signal for a number indicating a number of digital storage units (see abstract, paragraphs 0055 and 0058-0062) where the prior art teaches a control information is attaches to the input data and wherein the contents are stored for specific days, for example, see figure 3. See also figure 14 and paragraph 0123.

It is understood that Nakajima indicates that, see Abstract, an indication is given in terms of numerical length of how long the content is to be stored before being deleted.

Further the Examiner cited Nakajima paragraph 0055 which states:

A CPU 31 generates storage control information to be described later with reference to FIG. 3 on the basis of a signal input from an input section 34 via an internal bus 32 and attaches the generated storage

control information to the data input via a data interface 33 and the internal bus 32,...

There is further relevant disclosure in Nakajima paragraph 58 which states in pertinent part:

The CPU 31 receives the data to be added to a program stream and a data broadcast stream via the data interface 33 and the internal bus 32 and generates storage control information in accordance with a control signal input from the input section 34 via the internal bus 32. ...The storage control information restricts the storage period of time of the content of the number of times the content is reproduced or copied... The storage control information is 3 bytes wide for example, a first byte being indicative of the contents of control, the second byte being indicative of the number of times the content is reproduced, and a third byte being indicative of the number of days, for example.

Continuing at paragraph 60 about the duration of permitted storage:

To the content which will be deleted after the predetermined number of days have passed, the storage control information is added in which "0x01" indicative that this content will be deleted in accordance with the predetermined number of passed days is written to the first byte and "0xNN" (NN being the number of days) indicative of the number of days from the recording to the deletion of this content is written to the second byte, for example. (Emphasis added.)

Paragraph 61 more or less repeats what is in paragraph 60 and 59.

Thus Nakajima does specify how long the information will be stored by supplying a particular number expressed here in digital form indicating the number of days of storage that is permitted. Further the way this information is provided is that in paragraph 0055 the CPU "attaches the generated storage control information to the data input". In paragraph 59 this process is described as "the storage control information is added". The same phrase is used in paragraphs 60 and 61 in terms of "added" characterizing on how the storage control information is provided.

The Examiner also cited Nakajima FIGS. 3 and 14 and paragraph 0123. Paragraph 0123 says:

In addition to the above-mentioned data structures, the like storage control information may be inserted in data which is transmitted on the basis of a markup language standard using BS digital data broadcast called BML (Broadcasting Markup Language). In this case, the storage control information is inserted in "reserved future use" in the data structure for additional identification information area...shown in FIG. 14. (Emphasis added.)

FIG. 3 shows the way in which the "delete after (NN) days" is expressed in terms of numerals. FIG. 14 shows the relevant code.

None of these has any description or mention of a "watermark" or "watermarking" or equivalent. Watermarking is a specific technique. In general it is a process of embedding information into a signal, typically audio or video. For instance in visible video watermarking, the watermark is visible in the picture or video. It is also possible to have invisible watermarking where the watermark cannot be perceived by the eye although it can be detected by technical means. In either case the watermark must be actually embedded in the video or audio. This is done for a specific purpose to make it much harder to remove the watermark without irreversibly altering the video or audio and thus reducing its value. The terms "watermark" or "watermarking" in the present application are consistent with the meaning of those terms as well understood in the field which in this case is video generally and more specifically video copy protection.

In this sense, watermarking requires more than just including information along with or adding it to some part of a signal. It requires some actual alteration of the video or audio. Nakajima does not do this. Instead as characterized above, he characterizes how his storage data is included in the parent video signal as, see Abstract "storage control information includes data for controlling content". In paragraphs 55 and 58-62, the term relevant is, see paragraph 55 "attaches the generated storage control information to the data input" and in paragraphs 59-61 "the storage control information is added". (Emphases added.) Moreover in paragraphs 0058-0061, the form of the storage control information is shown in FIG. 3 of Nakajima, where the various (digital) values are 0x02, 0x00, 0xNN shown on the second line of FIG. 3, and also referred to in paragraphs 0058-

0061. Clearly these are digital numerical values. Note that they are in digital form and are intended clearly for inclusion in a digital signal only.

For instance in paragraph 0060 as quoted above, this process is characterized “to the content which will be deleted after the predetermined number of days have passed, the storage control information is added in which “0x01” indicative that this content will be deleted in accordance with the predetermined number of passed days is written to the first byte and “0xNN” (NN being the number of days) indicative of the number of days...is written to the second byte, for example.” (Emphasis added.) So clearly these values are installed in particular digital fields (bytes) of the data. There is no indication of watermarking here.

Further the signal being modified in Nakajima with this added data is a digital signal. Obviously one cannot add digital data as in FIG. 3 to an analog signal, especially installing it in the “first byte” and “second byte,” as quoted above. (“Bytes” of course denotes a digital rather than an analog signal.) So clearly the signal which is being modified in Nakajima is a digital signal. This is illustrated in Nakajima FIG. 5 showing the various video (V) and audio (A) and control (ECM and EMM) portions of the signal. See Nakajima paragraph 68 “FIG. 5 shows an exemplary structure of an MPEG2-TS...”. Clearly this is the type of signal being acted on in accordance with the data added as shown in FIG. 3.

Note that the ECM is not part of the video or audio by definition in FIG. 5; instead as explained in 0058, these are the “Entitlement Control Message” portions of the signal as distinct from the video and audio. Hence clearly any storage control information as explained in Nakajima is added into these control segments, such as the EMM signal also shown in FIG. 5. Paragraph 69 says “EMM is information for setting, for each receiver, such parameters as customer management, changing of encryption case, and permission of viewing.” So clearly the signals added in paragraphs 0058-0061 are added to the ECM or the EMM, not to the video (V) or audio (A). This further points out that they are, first, not watermarks and second, not put into an analog signal.

Claims Distinguish Over the References

Claim 1, representative of the other independent claims, in its final clause now recites “wherein the indication of how long to allow subsequent digital storage is a watermark located in the modified analog video signal including an encoded number of digital storage duration units.” As pointed out above, this distinguishes on at least two grounds over Nakajima. First, there is no “watermark” in Nakajima. As described at length above, he merely adds digital data to the ECM or EMM blocks, but does not alter the audio or video and especially not by watermarking. As pointed out above, watermarking has particular attributes and is advantageous in this context, but is not even suggested by Nakajima. It would be relatively easy to remove the Nakajima storage duration control signals since they are present in well defined locations (EMM and ECM) which are not part of the video or audio. Watermarks are intended to be hard to remove. Hence an advantage in accordance with Claim 1 is that putting the information in the watermark makes it difficult for a hacker wishing to make an illegal copy or change the copy permission status to alter the information.

Second, Claim 1 recites “a watermark located in the modified analog video signal”. As pointed out above, in Nakajima the added information is in the digital domain. It is not disclosed or suggested that this information is ever converted to analog. In fact the Nakajima description appears to be strictly of processing of digital data. See for instance, his FIG. 3 indicating digital numerical values and FIG. 6 showing according to Nakajima paragraph 34 “an exemplary configuration of a receiver”. FIG. 6 is clearly a strictly a digital device. Moreover the receiver of FIG. 6 has the complimentary Nakajima encoder or storage control generation generator of FIG. 2, which corresponds to the process carried out in present Claim 1 and again FIG. 2 shows strictly a digital device. Hence there is no opportunity using Nakajima's generator of FIG. 2 to include data in an “analog video signal”.

The other reference Sako fails to remedy these deficiencies in Nakajima.

So for each of these two reasons Claim 1 distinguishes over the two cited references, even in combination.

Other Claims

Each of the other previously pending independent claims is amended here identically to Claim 1, and so distinguishes over the references for at least the same reasons. All claims dependent thereon are allowable for at least the same reasons as their respective base claims.

New Claims 72-76

New Claims 72-76 respectively are similar to previously pending Claims 1, 15, 27, 47, and 76, but omit (final clause) "or a watermark in the analog video signal for a number indicating a number of digital storage duration units." So these new claims recite "the indication is. . .a pointer to video scan lines 21-22." The Examiner indicated that this feature had not been examined, but it is believed to distinguish these claims over at least the cited references. So each of these new claims is believed to be allowable over the cited references.


CONCLUSION

In view of the above, all presently pending claims in this application are believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Attorney Docket No. 136922003400.

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